

REMARKS

The following Supplemental Response is made to clarify Application's arguments submitted in its Amendment on 27 February 2004. Upon review of this Amendment, Applicant noted that its characterization of the Furushima (US 5,815,520) reference as teaching gallium "arsenide" was not accurate.

In particular, Applicant asserted on page 11 of its Amendment that Furushima teaches the problems associated with forming crystalline gallium "arsenide" on silicon carbide substrates. This is not accurate. Furushima teaches the problems associated with forming a gallium "nitride" and other group III nitride layers on a substrate. This misstatement, however, does not change Applicant's argument, but rather reinforces Applicant's position that the art has recognized the difficulty in forming crystalline group III nitride semiconductors and that one skilled in the art would not have been realistically motivated to deviate from a specified solution to a difficult problem.

For example, Furushima recognizes similar problems with the growth of gallium nitride films (lattice mismatches and dislocations) as described in the present application. Furushima's solution to these problems is to vapor deposit a zinc oxide buffer layer between the substrate and a gallium nitride layer. Furushima also teaches that it is preferable to have a thin single crystal layer or alternatively a zinc oxide buffer layer having some polycrystals provided that the etch pit density caused by crystal defects are low. (See Furushima, column 2, lines 10-22.) Given the difficulties in forming group III nitride films, it is reasonable for one skilled in the art to follow the teachings stressed by Furushima rather than deviate therefrom.

As discussed in Applicant's Amendment, the secondary reference, Ito, has nothing to do with light emitting semiconductors and it is respectfully submitted that one skilled in the art would not be realistically motivated to modify a working solution to the problems of growing crystalline group III nitrides, as taught by Furushima, by reading a reference that does not address the same issues. The only guidance to modify the specific teachings of Furushima is from Applicant's disclosure -- an impermissible hindsight reconstruction of the claimed subject matter.

Accordingly, since none of the cited references suggest the combined steps of spin coating a layer followed by growing a III-V nitride layer thereon, when the spin coated layer has a different group III element than the grown layer, the references can not negate the patentability of the claimed subject matter. Favorable consideration and allowance of the application are respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



Daniel Bucca, Ph.D.
Registration No. 42,368

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 DB:MWE
Facsimile: (202) 756-8087
Date: 18 March 2004